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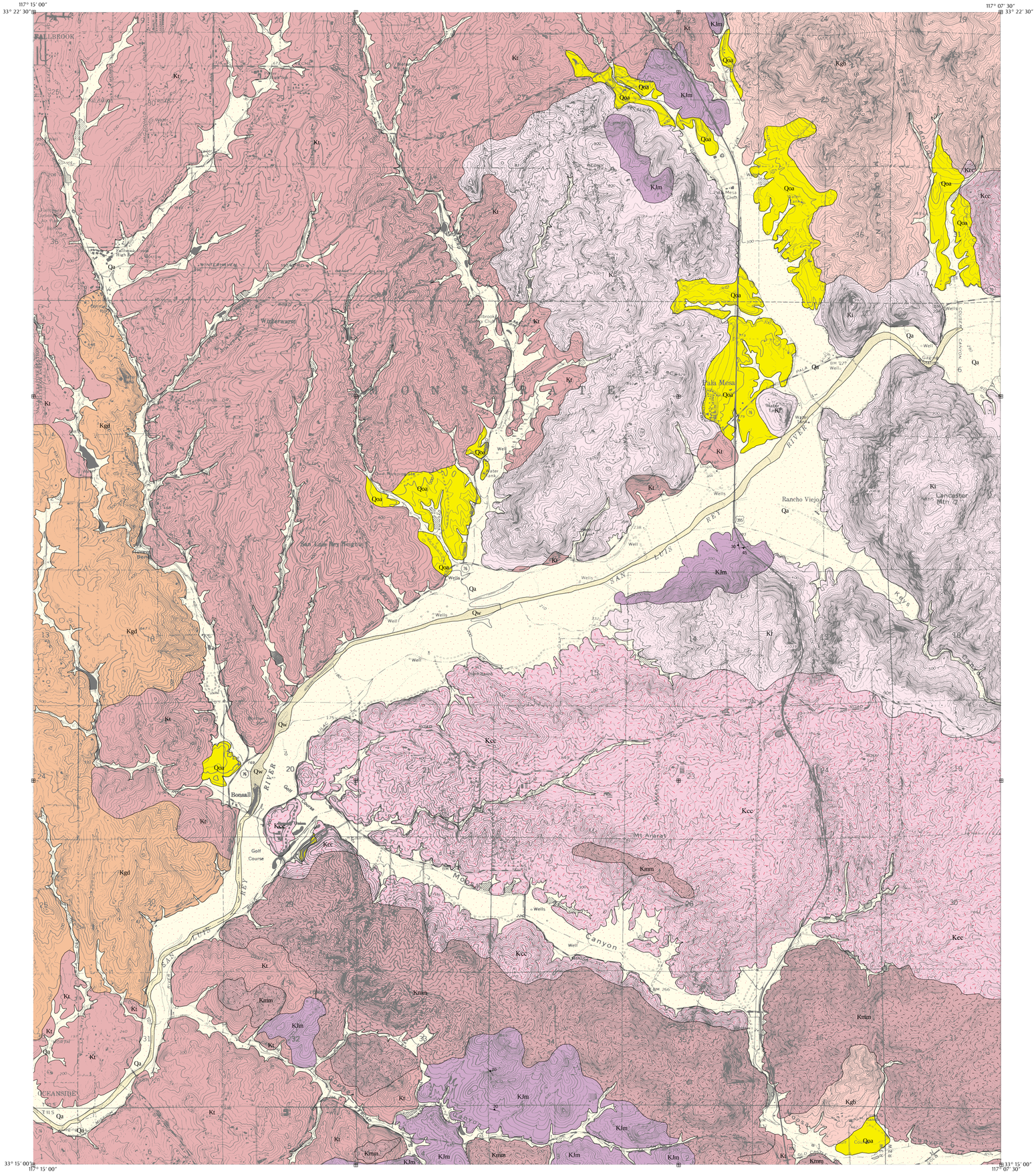
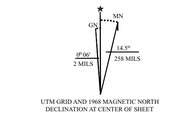
DEPARTMENT OF CONSERVATION - DARRYL YOUNG, DIRECTOR

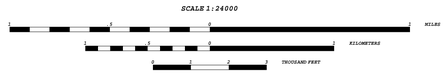
Prepared in cooperation with the U.S. Geological Survey




Topographic base by U.S. Geological Survey
7.5' Bonsall Quadrangle
Polyconic projection, contour interval 20 feet,
dotted lines 10 feet.




UTM GRID AND 1968 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET




This geologic map was funded in part by the U.S. Geological Survey National Cooperative Geologic Mapping Program, STATEMAP Award no. 99HQAG0134.

# GEOLOGIC MAP OF THE BONSALL 7.5' QUADRANGLE SAN DIEGO COUNTY, CALIFORNIA: A DIGITAL DATABASE

VERSION 1.0

By
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Digital Database
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2000

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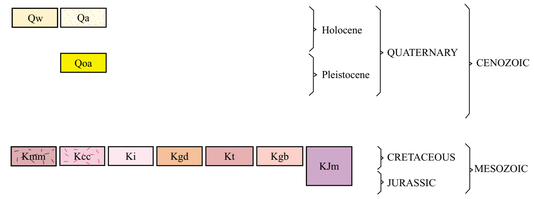
2. U. S. Geological Survey, Riverside, CA

DEPARTMENT OF CONSERVATION
Division of Mines and Geology

## CORRELATION OF MAP UNITS




## MAP SYMBOLS

Contact between map units; generally approximately located of inferred.

18 — Strike and dip of inclined metamorphic foliation.

## DESCRIPTION OF MAP UNITS

MODERN SURFICIAL DEPOSITS - Sediment that has been recently transported and deposited in channels and washes, on surfaces of alluvial fans and alluvial plains, and on hillslopes and in artificial fills. Soil-profile development is non-existant. Includes:

**Qw** — Active channel and wash deposits (late Holocene) - Unconsolidated to locally poorly consolidated sand and gravel deposits in active washes of streams.

**Qa** — Active alluvial flood plain deposits (late Holocene) - Unconsolidated to locally poorly consolidated sand and gravel deposits in active alluvial flood plains.

OLD SURFICIAL DEPOSITS - Sedimentary units that are moderately consolidated and slightly to moderately well dissected. Older surficial deposits have upper surfaces that are capped by moderately to well-developed pedogenic soils. Includes:

**Qoa** — Older alluvial flood plain deposits (Pleistocene, younger than 500,000 years) - Mostly moderately well consolidated, poorly sorted, permeable flood plain deposits.

BEDROCK UNITS

**Knm** — Monzogranite of Merriam Mountain (Cretaceous) -Leucocratic hornblende-biotite monzogranite; medium to coarse grained, massive.

**Kcc** — Tonalite of Couser Canyon (Cretaceous) - Hornblende-biotite tonalite; coarse grained and massive. Contains some granodiorite and is characterized by an abundance of pegmatite dikes.

**Ki** — Granodiorite of Indian Mountain (Cretaceous) - Biotite leucocratic granodiorite; white, fine to medium grained and massive.

**Kgd** — Granodiorite undivided (Cretaceous) - Mostly hornblende-biotite granodiorite; coarse to medium grained.

**Kt** — Tonalite undivided (Cretaceous) - Mostly hornblende-biotite tonalite; coarse grained, light gray.

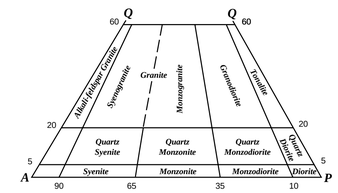
**Kgb** — Gabbro undivided (Cretaceous) - Mostly biotite-hornblende-hypersthene gabbro; coarse grained, dark gray, massive.

**KJm** — Metavolcanic and metasedimentary rocks undivided (Cretaceous and Jurassic) - Low grade (greenschist facies) rocks that are in part coeval with and in part older than the Cretaceous plutonic rocks they lie in contact with.

## REFERENCES

Larsen, E.S., Jr., 1948, Batholith and associated rocks of Corona, Elsinore, and San Luis Rey Quadrangles, southern California: The Geological Society of America Memoir 29, Plate 1, scale 1:125,000.

Weber, H.F., Jr., 1963, Geology and mineral resources of San Diego County, California: California Division of Mines and Geology County Report 3, Plate 1, scale 1:120,000.




Classification of plutonic rock types (from IUGA, 1973, and *Streckeisen, 1973). A, alkali feldspar; P, plagioclase feldspar; Q, quartz.

*Streckeisen, A.L, 1973. Plutonic rocks--Clasification and nomenclature by the IUGA Subcommission on Systematics of Igneous Rocks: Geotimes, vol.18, p.26-30.